IN THE CLAIMS

Please amend the claims as follows.

1. (Currently Amended) An apparatus for enhancing image quality of a previously coded digital video signal in a digital video system, said apparatus comprising:

a usefulness metric generator capable of generating a usefulness metric using coding information, the usefulness metric utilized to determine an amount of video enhancement that can be applied to said previously coded digital video signal without enhancing coding artifacts; and

a coding gain control block capable of using the usefulness metric to determine an allowable amount of enhancement to be applied to the previously coded digital video signal by an adaptive peaking unit.

2. (Currently Amended) The apparatus as claimed in Claim 1 wherein ~~said digital video system~~ the adaptive peaking unit comprises at least one sharpness enhancement unit that is capable of applying a sharpness enhancement algorithm to said previously coded digital video signal, and ~~wherein said apparatus further comprises:~~

[[a]] the coding gain control block is capable of using said usefulness metric to determine an allowable amount of sharpness enhancement applied to said previously coded digital video signal by said at least one sharpness enhancement unit.

3. (Previously Presented) An apparatus for enhancing image quality of a previously coded digital video signal, the apparatus comprising:

a usefulness metric generator capable of generating a usefulness metric utilized to determine an amount of video enhancement that can be applied to the previously coded digital video signal without enhancing coding artifacts; and

a coding gain controller capable of using the usefulness metric to determine an allowable amount of sharpness enhancement applied to the previously coded digital video signal by at least one sharpness enhancement unit, the at least one sharpness enhancement unit capable of applying a sharpness enhancement algorithm to the previously coded digital video signal, wherein said at least one sharpness enhancement unit is an adaptive peaking unit.

4. (Original) The apparatus as claimed in Claim 3 wherein said usefulness metric calculates on a pixel by pixel basis how much a pixel can be enhanced without increasing coding artifacts.

5. (Original) The apparatus as claimed in Claim 4 wherein coding gain of a pixel is determined by the equation:

$g_{coding}(i,j) = UME(i,j) + g_{edge}(i,j)$

and wherein i and j are pixel coordinates, g_{coding} is a pixel coding gain, UME is a usefulness metric, and g_{edge} is based upon edge related information derived from an image.

6. (Original) The apparatus as claimed in Claim 5 wherein a value for g_{cdge} (i,j) is calculated by setting the value of g_{cdge} (i,j) equal to (1) an experimentally determined value c for an edge pixel p (i,j) at a spatial location (i, j), and to (2) a value of one half of c for a pixel p(i – 1, j) at a spatial location (i – 1, j) and for a pixel p (i + 1, j) at a spatial location (i + 1, j), and to (3) a value of one fourth of c for a pixel p(i – 2, j) at a spatial location (i – 2, j) and for a pixel p (i + 2, j) at a spatial location (i + 2, j), and to (4) a value of zero for all other pixels.

7. (Previously Presented) The apparatus as claimed in Claim 1 wherein said usefulness metric generator utilizes only the coding information to generate said usefulness metric.

8. (Previously Presented) The apparatus as claimed in Claim 1 wherein said usefulness metric generator utilizes the coding information and scene content related information to generate said usefulness metric.

9. (Currently Amended) A digital video system comprising an apparatus for enhancing image quality of a previously coded digital video signal in said digital video system, said apparatus comprising:

a usefulness metric generator capable of generating a usefulness metric using coding information, the usefulness metric utilized to determine an amount of video image enhancement that can be applied to said previously coded digital video signal without enhancing coding artifacts; and

a coding gain control block capable of using the usefulness metric to determine an allowable amount of enhancement to be applied to the previously coded digital video signal by an adaptive peaking unit.

10. (Currently Amended) The digital video system as claimed in Claim 9 wherein ~~said digital video system~~ the adaptive peaking unit comprises at least one sharpness enhancement unit that is capable of applying a sharpness enhancement algorithm to said previously coded digital video signal, and ~~wherein said apparatus further comprises:~~

[[a]] the coding gain control block is capable of using said usefulness metric to determine an allowable amount of sharpness enhancement applied to said previously coded digital video signal by said at least one sharpness enhancement unit.

11. (Previously Presented) A digital video system, comprising:

at least one sharpness enhancement unit capable of applying a sharpness enhancement algorithm to a previously coded digital video signal; and

an apparatus for enhancing image quality of the previously coded digital video signal in the digital video system, the apparatus comprising:

a usefulness metric generator capable of generating a usefulness metric utilized to determine an amount of video image enhancement that can be applied to the previously coded digital video signal without enhancing coding artifacts; and

a coding gain controller capable of using the usefulness metric to determine an allowable amount of sharpness enhancement applied to the previously coded digital video signal by the east one sharpness enhancement unit;

wherein said at least one sharpness enhancement unit is an adaptive peaking unit.

12. (Original) The digital video system as claimed in Claim 11 wherein said usefulness metric calculates on a pixel by pixel basis how much a pixel can be enhanced without increasing coding artifacts.

13. (Original) The digital video system as claimed in claim 12 wherein coding gain of a pixel is determined by the equation:

$g_{coding}(i,j) = UME(i,j) + g_{edge}(i,j)$

and wherein i and j are pixel coordinates, g_{coding} is a pixel coding gain, UME is a usefulness metric, and g_{edge} is based upon edge related information derived from an image.

14. (Original) The digital video system as claimed in Claim 13 wherein a value for g_{edge} (i,j) is calculated by setting the value of g_{edge} (i,j) equal to (1) an experimentally determined value c for an edge pixel p (i,j) at a spatial location (i, j), and to (2) a value of one half of c for a pixel p(i – 1, j) at a spatial location (i – 1, j) and for a pixel p (i + 1, j) at a spatial location (i + 1, j), and to (3) a value of one fourth of c for a pixel p(i – 2, j) at a spatial location (i – 2, j) and for a pixel p (i + 2, j) at a spatial location (i + 2, j), and to (4) a value of zero for all other pixels.

15. (Previously Presented) The digital video system as claimed in Claim 9 wherein said usefulness metric generator utilizes only the coding information to generate said usefulness metric.

16. (Previously Presented) The digital video system as claimed in Claim 9 wherein said usefulness metric generator utilizes the coding information and scene content related information to generate said usefulness metric.

17. (Currently Amended) A method for enhancing image quality of a previously coded digital video signal in a digital video system, said method comprising the steps of:

generating a usefulness metric in a usefulness metric generator in said digital video system using coding information; and

utilizing said usefulness metric to determine an amount of video image enhancement that can be applied by an adaptive peaking unit to said previously coded digital video signal without enhancing artifacts.

18. (Currently Amended) The method as claimed in Claim 17 wherein ~~said digital video system~~ the adaptive peaking unit comprises at least one sharpness enhancement unit that is capable of applying a sharpness enhancement algorithm to said previously coded digital video signal, and ~~wherein said method further comprises the step of:~~

~~utilizing said usefulness metric in~~ a coding gain control block is capable of using the usefulness metric to determine an allowable amount of sharpness enhancement applied to said previously coded digital video signal by said at least one sharpness enhancement unit.

19. (Previously Presented) A method for enhancing image quality of a previously coded digital video signal in a digital video system, the digital video system comprising at least one sharpness enhancement unit capable of applying a sharpness enhancement algorithm to the previously coded digital video signal, the method comprising the steps of:

generating a usefulness metric in a usefulness metric generator;

utilizing the usefulness metric to determine an amount of video image enhancement that can be applied to the previously coded digital video signal without enhancing artifacts by utilizing the usefulness metric in a coding gain controller to determine an allowable amount of sharpness enhancement applied to the previously coded digital video signal by the at least one sharpness enhancement unit;

wherein said at least one sharpness enhancement unit is an adaptive peaking unit.

20. (Original) The method as claimed in Claim 19 wherein said usefulness metric calculates on a pixel by pixel basis how much a pixel can be enhanced without increasing coding artifacts.

21. (Original) The method as claimed in Claim 20 wherein coding gain of a pixel is determined by the equation:

$g_{coding}(i,j) = UME(i,j) + g_{edge}(i,j)$

and wherein i and j are pixel coordinates, g_{coding} is a pixel coding gain, UME is a usefulness metric, and g_{edge} is based upon edge related information derived from an image.

22. (Original) The method as claimed in Claim 21 wherein a value for g_{edge} (i,j) is calculated by setting the value of g_{edge} (i,j) equal to (1) an experimentally determined value c for an edge pixel p (i,j) at a spatial location (i, j), and to (2) a value of one half of c for a pixel p(i – 1, j) at a spatial location (i – 1, j) and for a pixel p (i + 1, j) at a spatial location (i + 1, j), and to (3) a value of one fourth of c for a pixel p(i – 2, j) at a spatial location (i – 2, j) and for a pixel p (i + 2, j) at a spatial location (i + 2, j), and to (4) a value of zero for all other pixels.

23. (Previously Presented) The method as claimed in Claim 17 comprising the step of:

utilizing only the coding information to generate said usefulness metric in said usefulness metric generator.

24. (Previously Presented) The method as claimed in Claim 17 comprising the step of:

utilizing the coding information and scene content related information to generate said usefulness metric in said usefulness metric generator.

25. (Previously Presented) The method of Claim 17, wherein the coding information comprises at least one of: a quantization step size, a macroblock type, and a forward motion vector.